lic recitation, reading, conversation, attention, study, difficult recollection and greatest effort. In these the following points were observed: Automatisms varied somewhat with the nature of the activity in question, *e. g.*, in writing, lips and tongue furnished 46% of all the automatisms; in reading, body, head, hands and fingers comprised more than half of the whole number; in recitation, feet, fingers and body led; in study it was fingers, eyes, hands and jaws, and so on. There were few automatisms of those muscles engaged in a given task. But when those parts which show greatest frequency of automatisms were pressed into actual performance of work, as the fingers in writing and the vocal organs in reading, the number of automatisms were not thereby apparently diminished. The average number of automatisms per 100 persons appears to increase slightly with the intensity of effort, *e. g.*, recitation, public recitation and conversation show an average of 120 automatisms per hundred; but attention, study, difficult recollection and greatest effort yielded 136. Also automatisms increase in number and intensity with age in the kindergarten—the class containing those of ages 3½ to 4 showing fewest and feeblest. In the primary group (ages 6 to 7) there was a marked falling off in automatisms as compared to the older children in the kindergarten. The automatisms of the youngest were chiefly of postures. Also the automatisms were more pronounced in making small movements, and in nearly every case the automatisms showed a somewhat rapid increase toward the end of the work period. The automatisms of the head (neck muscles), body, legs and arms were rather more than twice the number in children as compared to adolescents, being 9.7% and 4.4% respectively of all automatisms. CHRISTISON.

From American Journal of Psychology, July, 1896.

THERAPEUTICS.

REMOVAL OF THE TRUNK OF THE SUPERIOR MAXILLARY NERVE AND MECKEL'S GANGLION. McKay. Australasian Medical Gazette, January, 1897.

The patient, a man of 41, had 22 years before been shot in the left side of the face, the ball never having been removed. Three years before he came to McK. he had begun to suffer from severe neuralgia in the left side of the face. The cicatrix had first been dissected out, and the ball taken away, and later the Gasserian ganglion had been removed, without giving permanent relief. MacK. cut down and secured the infraorbital nerve, and with it as a guide, chiseled through both anterior and posterior walls of the antrum, removed the floor of the infraorbital canal, dissected out and took away a section of the nerve with Meckel's ganglion. The presence of the ganglion was shown by microscopical examination. Owing to bad surroundings, the patient got erysipelas in his wound, but recovered, and was free from neuralgia for three months. Later he had another attack of erysipelas, and has suffered since from neuralgia. It is considered by the author as remarkable that the pain persisted after the removal of the Gasserion ganglion in the earlier operation. He seems to think, however, that there is some question as to whether it was really removed.

C. L. ALLEN.

NERVE SUTURE. Gaz. Hebd. de Med. et de Chi., February 7, 1897.

In a thesis Ehrmann reviews the history of suture of widely spread nerve ends, which he considers necessary when the distance between the two extremities is greater than 2 c. m., believing that some sort of a way must be prepared from the centre to the peripheral end. The proceeding is only necessary when there has been a loss of nerve substance so considerable that the two ends cannot be brought into exact opposition.

Several proceedings have been suggested to obtain this result.

Letivant suggested the attachment of the lower end of the nerve to the free extremity as an intact neighboring nerve—a nervous graft.

Vulpian, and others, made experiments on nerves by transplanting a portion of a nerve of an animal between the two widely spread ends, but for distant suturing this has not been found successful.

Van Lair and Assoky furnishes a sort of bridge to the regenerated by attachments of silk or cat-gut threads along which the fibres of the regenerated nerve might follow. These authors succeeded in thus bridging a gap as long as 3½ c. m., and they believe that the plan is a particularly feasible one. The threads persist (even when made of an absorbable material like cat gut) for a sufficient length of time to allow of the growth of approximal ends of the nerve along their course.

MITCHELL.

NERVE SUTURE AND OTHER OPERATIONS FOR INJURY TO NERVES OF THE UPPER EXTREMITY. A. J. Ochsner, M. D. International Jour. of Surgery, December, 1896.

Every severed nerve should be sutured, even after years, and the earlier the operation is performed the better. If neither sensation nor motion is established within a year the nerve should be again exposed, the cicatricial tissue removed and the ends again sutured. The ends should be clean cut and contain neither crushed tissue nor cicatricial tissue. Tension must be avoided. The wound must heal without suppuration to secure the best result. Hemorrhage should be controlled perfectly to prevent intervening clot. Carefully prepared catgut is the best material. After suturing the ends, either direct or "a distance," it is well to stitch a fold of fascia over the united nerve-ends. The extremity should be placed at rest. The external incision should be ample. Castor oil taken in large, daily doses often relieves pain due to traumatic injuries of nerves.

FREEMAN.

A CASE IN WHICH THE SPINAL CORD OF A RABBITT WAS SUCCESSFULLY USED AS A GRAFT IN THE MEDIAN NERVE OF A MAN. By Mayo Robson. British Medical Journal, October 31, 1896.

The patient fell on a scythe and cut his upper arm at the inner and lower part. All the muscles acting on the wrist and hand, which had their nerve supply from the median and ulnar nerves, were paralyzed, while those supplied by the musculo-spiral were capable of acting. There was also marked alteration of sensation. The extensors reacted to faradism; the flexors showed no reaction. It was evident that there had been a complete division of the median, ulnar and internal cutaneous nerves. About seven months after the accident incision was made along the line of the cicatrix, and the two ends of the internal cutaneous nerve were sutured; those of the ulnar were united by grafting strands of the sciatic nerve of a rabbit so as to fill up the gap. The ends of the median could not be brought nearer one another than two and a half inches, and a portion of the spinal cord of a rabbit just killed was used as a graft to connect them. The operation was performed January 30, 1890; on February 10 the patient could feel the scratch of a pin on the flexor aspect of the first phalanx of the thumb, and at the root of the index finger. On February 17 sensation had returned over the whole of the palmar surface of the thumb, and the proximal phalanx of the index finger. When the patient was seen six years after the operation the muscles of the affected limb were found to have nearly their normal volume. The only weak muscle was the abductor of the thumb. Sensation was perfect. SPILLER.